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CST-105

Programming Exercises

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Ch. 24

24.1

public class Exercise\_024.01 {

public static void main(String[] args) throws Throwable {

String[] array1 = {"Tom", "George", "Peter", "Jean", "Jane"};

String[] array2 = {"Tom", "George", "Michael", "Michelle", "Daniel"};

MyArrayList<String> list1 = new MyArrayList(array1);

MyArrayList<String> list2 = new MyArrayList(array2);

System.out.println("list1 = " + list1);

System.out.println("list2 = " + list2);

System.out.println("Test below...\n");

list1.addAll(list2);

System.out.println("addAll\nlist1 = " + list1);

System.out.println("list2 = " + list2 + "\n");

list1 = new MyArrayList(array1);

list2 = new MyArrayList(array2);

list1.removeAll(list2);

System.out.println("removeAll\nlist1 = " + list1);

System.out.println("list2 = " + list2 + "\n");

list1 = new MyArrayList(array1);

list2 = new MyArrayList(array2);

list1.retainAll(list2);

System.out.println("retainAll\nlist1 = " + list1);

System.out.println("list2 = " + list2 + "\n");

System.out.println();

}

}

24.4

public class Exercise\_24\_04 {

public static void main(String[] args) {

// Create a GenericStack

GenericStack<Integer> stack = new GenericStack<>();

final int NUMBER\_OF\_PRIMES = 50; // Number of prime numbers

int count = 0;

for (int i = 2; count < NUMBER\_OF\_PRIMES; i++) {

if (isPrime(i)) {

stack.push(i);

count++;

}

}

// Display the numbers in the stack

System.out.println("The first 50 prime numbers in descending order: ");

for (int i = 1; !stack.isEmpty(); i++){

if (i % 10 == 0)

System.out.printf("%3d\n", stack.pop());

else

System.out.printf("%3d ", stack.pop());

}

System.out.println();

}

/\*\* Return true if n is a prime number, Otherwise return false \*/

public static boolean isPrime(int n) {

for (int i = 2; i <= n / 2; i++) {

if (n % i == 0)

return false;

}

return true;

}

}